The Study of Smart Antenna System To Simplify Hierarchical Structure of GSM System

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ABSTRACT

Wireless Cellular Communication grows rapidly in recent years. The rapid growth in the number of mobile users has spurred many operators to increase their spectrum efficiency, improve the signal to noise ratio and optimize the radio coverage. The development of Smart Antenna can provide the best way to meet the requirement of operator ’s goal. In this thesis,Smart Antenna System is applied to simplify handover behavior for Hierarchical Cell Structure (HCS) in the GSM network. As a result, the complexity of radio network optimization and maintenance can be significantly reduced. In mobile communication system, the traffic distribution, signal coverage and interference will affect the quality of cell traffic. If the number of users grows and the spectrum can ’t be increased at the same time, the quality of the network will downgrade. The application of Smart Antenna can solve this dilemma by using the beam selection algorithm to effectively improve network quality and capacity. Key Words : cell selection-reselection ， handover， Hierarch Cell Structure， Smart Antenna System

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